Data Sheet (Cat.No.TMPY-02005)

TargetMol

Mucin-1/MUC1 Protein, Human, Recombinant (Isoform Y-LSP, hFc)

General Information

Synonyms:	PEM;ADMCKD1;CA15-3;CD227;MCD;mucin 1, cell surface associated;MUC-1;MUC-1/SEC; Mucin 1;MUC1/ZD;MCKD1;PUM;ADMCKD;KL-6;EMA;MCKD;PEMT;MUC-1/X;H23AG;MAM6
Protein Construction:	A DNA sequence encoding the human MUC1 isoform 2 (NP_001018016.1) extracellular domain (Met 1-Gly 167) was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Ser 33
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P15941-11
Molecular Weight:	42 kDa (predicted); 55-60 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Mucin 1, cell surface-associated (MUC1) or polymorphic epithelial mucin (PEM) is a membrane-bound protein that is a member of the mucin family. Mucins are O-glycosylated proteins that play an essential role in forming protective mucous barriers on epithelial surfaces. These proteins also play a role in intracellular signaling. This

protein is expressed on the apical surface of epithelial cells that line the mucosal surfaces of many different tissues including lung, breast stomach, and pancreas. MUC-1/CC1/CD227 Exclusively located in the apical domain of the plasma membrane of highly polarized epithelial cells. After endocytosis, internalized, and recycled to the cell membrane. This protein is proteolytically cleaved into alpha and beta subunits that form a heterodimeric complex. The N-terminal alpha subunit functions in cell-adhesion and the C-terminal beta subunit is involved in cell signaling. Overexpression, aberrant intracellular localization, and changes in glycosylation of this protein have been associated with carcinomas. The alpha subunit has cell adhesive properties. MUC-1/CC1/CD227 Can act both as an adhesion and an anti-adhesion protein. This protein May provide a protective layer on epithelial cells against bacterial and enzyme attack. The beta subunit contains a C-terminal domain which is involved in cell signaling, through phosphorylations and protein-protein interactions. MUC-1/CC1/CD227 participated in modulates signaling in ERK, SRC, and NF-kappa-B pathways. In the activated T-cells, MUC-1/CC1/CD227 influences directly or indirectly the Ras/MAPK pathway. MUC-1/CC1/CD227 Promotes tumor progression and regulates TP53-mediated transcription and determines cell fate in the genotoxic stress response. Binds, together with KLF4, the PE21 promoter element of TP53 and represses TP53 activity.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Brayman M, et al. (2004) MUC1: a multifunctional cell surface component of reproductive tissue epithelia. Reprod Biol Endocrinol 2: 4.

Schroeder J A, et al. (2001) Transgenic MUC1 interacts with epidermal growth factor receptor and correlates with mitogen-activated protein kinase activation in the mouse mammary gland. J Biol Chem. 276 (16): 13057-64.

Li Y, et al. (2001) The epidermal growth factor receptor regulates interaction of the human DF3/MUC1 carcinoma antigen with c-Src and beta-catenin. J Biol Chem. 276 (38): 35239-42.

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